

WE CLAIM:

1. A computing apparatus arranged to operate within a wireless network including at least one radio sector in which mobile terminals can communicate, the computing apparatus
5 comprising:

network resource allocation logic that operates to request allocation of at least one network resource associated with the radio sector for at least one mobile terminal; to determine if the allocation of the at least one
10 network resource associated with the radio sector is successful; and, if the allocation fails, to request the at least one mobile terminal be placed within a dormant mode.

2. A computing apparatus according to claim 1, wherein
15 the network resource allocation logic further operates to continue to request allocation of the at least one network resource associated with the radio sector for the at least one mobile terminal after the allocation has previously failed; to determine if the allocation of the at least one
20 network resource associated with the radio sector is successful after the allocation has previously failed; and, if the allocation is successful, to request the at least one mobile terminal be placed within a connected mode.

25 3. A computing apparatus according to claim 2, wherein, if a plurality of mobile terminals have been placed within the dormant mode, the network resource allocation logic further operates to select a predetermined queue order for requesting the dormant mobile terminals to be placed
30 within the connected mode.

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4. A computing apparatus according to claim 1 further comprising a hard handoff determination logic that operates to determine if a hard handoff from a first radio sector to a second radio sector is necessary for the mobile terminal and, if the hard handoff is necessary, to trigger the operation of the network resource allocation logic for the mobile terminal within the second radio sector.

5. A computing apparatus according to claim 4, wherein the hard handoff determination logic operates to determine if a hard handoff is necessary for the mobile terminal by receiving and processing Pilot Strength Measurement (PSM) messages from the mobile terminal.

6. A computing apparatus according to claim 4, wherein, if the allocation of the at least one network resource associated with the second radio sector for the mobile terminal is successful, the network resource allocation logic further operates to request the de-allocation of any network resources associated with the first radio sector for the mobile terminal.

7. A computing apparatus according to claim 4, wherein the network resource allocation logic further operates to request allocation of the at least one network resource associated with the second radio sector for the mobile terminal if the allocation has previously failed; to determine if the allocation of the at least one network resource associated with the second radio sector is successful after a previous failure; and, if the allocation

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is successful, to request the mobile terminal be placed within a connected mode.

8. A computing apparatus according to claim 7, wherein
5 the network resource allocation logic further operates to determine whether a predetermined time period has expired since the mobile terminal has been requested to be placed within the dormant mode and, if the predetermined time period has expired, to request the de-allocation of any network
10 resources associated with the first radio sector for the mobile terminal.

9. A computing apparatus according to claim 1, wherein
15 the at least one network resource associated with the radio sector comprises a Data Traffic Channel (DTC) between the mobile terminal and a Radio Access Port (RAP).

10. A computing apparatus according to claim 1, wherein
20 the at least one network resource associated with the radio sector comprises a Dedicated Signalling Channel (DSC) between the mobile terminal and a Radio Access Port (RAP).

11. A computing apparatus according to claim 1, wherein
25 the at least one network resource associated with the radio sector comprises a Segmentation and Distribution Unit (SDU) within a Radio Access Port (RAP).

12. A computing apparatus according to claim 1, wherein
30 the network resource allocation logic requesting the mobile terminal be placed within a dormant mode comprises requesting

the mobile terminal to suspend communications on any of its previously established communication channels.

13. A computing apparatus according to claim 2, wherein
5 the network resource allocation logic requesting the mobile terminal be placed within the dormant mode comprises requesting the mobile terminal to suspend communications on any of its previously established communication channels; and
wherein the network resource allocation logic
10 requesting the mobile terminal be placed within the connected mode comprises requesting the mobile terminal to end the suspension of communications on its previously established communication channels.

14. A computing apparatus according to claim 1, wherein
15 the network resource allocation logic determining if he allocation of he at least one network associated with the radio sector is successful comprises monitoring for an allocation failure message, the reception of the allocation
20 failure message indicating that the allocation of at least one network resource associated with the radio sector failed.

15. A computing apparatus arranged to operate within a wireless network including at least one Radio Access Port
25 (RAP) that communicates with mobile terminals within at least one radio sector, the computing apparatus comprising:

network resource allocation logic that operates to allocate resources associated with the RAP to a mobile terminal and to request that the mobile terminal be placed
30 within a dormant mode if the attempt to allocate resources associated with the RAP to the mobile terminal fails.

16. A wireless communication network comprising a Radio Access Port (RAP) that operates to communicate with mobile terminals within at least one radio sector and a computing apparatus according to claim 15.

17. A computing apparatus arranged to control allocation of network resources for a mobile terminal within a radio sector, the computing apparatus comprising:

means for attempting allocation of at least one network resource associated with the radio sector for the mobile terminal;

means for determining if the allocation of the at least one network resource associated with the radio sector is successful; and

means for requesting the mobile terminal be placed within a dormant mode if the allocation of the at least one network resource associated with the radio sector fails.

18. A computing apparatus according to claim 17, wherein the means for attempting allocation of at least one network resource associated with the radio sector for the mobile terminal and the means for determining if the allocation is successful continue to operate after the allocation has previously failed; and

wherein the computing apparatus further comprises means for requesting the mobile terminal be placed within a connected mode if the allocation is successful after a previous failure.

19. A computing apparatus according to claim 17 further comprising means for determining if a hard handoff from a first radio sector to a second radio sector is necessary for the mobile terminal;

5 wherein the means for attempting allocation of at least one network resource associated with the radio sector for the mobile terminal operate for the mobile terminal within the second radio sector if the hard handoff is necessary.

10 20. A computing apparatus according to claim 19 further comprising means for requesting de-allocation of any network resources associated with the first radio sector for the mobile terminal if the allocation of the at least one network
15 resource associated with the second radio sector for the mobile terminal is successful.

21. A method for allocating network resources associated with a radio sector to a mobile terminal
20 comprising:

attempting to allocate at least one network resource associated with the radio sector to the mobile terminal; and

25 if the allocation of the at least one network resource fails, requesting the mobile terminal be placed within a dormant mode.

22. A method according to claim 21 further comprising:

30 attempting to allocate the at least one network resource associated with the radio sector to the mobile terminal after the allocation has previously failed; and

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if the allocation of the at least one network resource is successful after previously failing, requesting the mobile terminal be placed within a connected mode.

5 23. A method for performing a hard handoff of a mobile terminal from a first radio sector to a second radio sector comprising:

determining if network resources of the second radio sector are sufficient for the mobile terminal; and

10 if the network resources of the second radio sector are not sufficient for the mobile terminal, instructing the mobile terminal to be placed within a dormant mode until sufficient network resources for the mobile terminal are available.

15 24. A wireless communication network comprising:

first and second Radio Access Ports (RAPs) that operate to communicate with mobile terminals within at least first and second radio sectors respectively; and

20 a computing apparatus that operates:

(a) to detect if a mobile terminal communicating with the first RAP requires a hard handoff from the first radio sector to the second radio sector;

(b) to attempt to allocate at least one resource
25 associated with the second RAP to the mobile terminal if a hard handoff is required; and

(c) to request the mobile terminal be placed into a dormant mode if the attempt to allocate the at least one resource fails.

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25. A network according to claim 24, wherein the computing apparatus comprises a Handoff Manager (HM) and a Radio Link Access (RLA), the HM performing operation (a) and the RLA performing operations (b) and (c) with instructions
5 from the HM.

26. A computing apparatus arranged to operate within a wireless network including at least one radio sector in which mobile terminals can communicate, the computing apparatus
10 comprising:

network resource allocation logic that operates to determine the availability of at least one network resource associated with the radio sector and, if the at least one network resource associated with the radio sector is
15 determined to have insufficient bandwidth for current traffic, to request at least one of the mobile terminals be placed within a dormant mode.

27. A computing apparatus according to claim 26,
20 wherein the network resource allocation logic selects the at least one of the mobile terminals to be placed within a dormant mode based upon a priority system.

28. A computing apparatus according to claim 26,
25 wherein the network resource allocation logic further operates to determine the availability of the at least one network resource associated with the radio sector and, if the at least one network resource associated with the radio sector is determined to have sufficient bandwidth for current
30 traffic and the mobile terminal placed within the dormant

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